

BEE 3299: Improving Teaching Assistant Grading and Feedback to Students

Bethanie Wallace (blw47)

Introduction

BEE 3299: Sustainable Development is an interesting course in the Biological and Environmental Engineering program because it is one of the only courses that is entirely web-based. Since all of the assignments are submitted and graded on Blackboard, the main interaction between students and instructors is through teaching assistant commentary on assignments.

After having been an undergraduate taking the course, an undergraduate TA, and currently a graduate TA in a more supervisory role; I have been able to experience the course from many different viewpoints. One of my main roles this semester during the course was to increase the quality of the feedback provided by undergraduate teaching assistants. My other roles have included helping develop lesson plans, editing weekly lessons, and grading major projects (midterms and final exams). In this report I will detail how grading and grading instructions could be improved in future semesters of the course and how feedback should be provided to undergraduate teaching assistants to increase commentary quality.

Initial Impressions of Teaching Assistant Feedback

Since BEE 3299 does not have lectures or recitations, one of the main interactions between students and graders is through the feedback given by the teaching assistants on each assignment. The other interaction between students and graders is chat sessions that are held throughout the semester to help encourage discussion on the course's topics. These chats do a good job of this, but due to the large class size, the only individual attention that students receive is through feedback on assignments. This makes the feedback critically important to the success of the students. Through the three years that I have been involved in this course, I have seen this aspect of the class improve tremendously, but there is still room for improvement.

When the course began this semester, my first task was to look through the feedback provided on each assignment and assess the quality of the commentary. There were two major things that I noticed immediately:

- 1) Commentary was generally good when the students had done something incorrectly on the assignment. Feedback would be given on what could be done differently, mostly based on the rubric. When the students received perfect or near perfect scores, the commentary was lacking.
- 2) Feedback that was given that was broken down by section of the assignment seemed to be the most effective. This style of grading forced the TAs to develop comments for each section, which made the feedback more detailed and helpful to the students.

Methods for Improving Feedback

In order to address these observations, it was my job to interact directly with the undergraduate TAs to improve the quality of their work. I looked through the grading on assignments and

determined if individual TAs needed extra guidance. I would email specific graders and give them tips on how to make their commentary more effective. During the middle of the semester, I contacted all of the TAs and provided them with feedback on their work up to that point.

Here are examples of good feedback versus bad feedback to graders (examples are from Assignment 3).

Good:

***FOR FUTURE REFERENCE, please type answers in box rather than attaching a document.*

1. (10/10) Good use of statistics from the readings. Primary of cause CO2 emissions is fossil fuel for industrial energy, especially oil and coal (32%), and the second highest source of this primary GHG is oil for transportation fuel (27%).

2. (9/10) "Evaporated water from ocean and soul"...what do you mean by this? Otherwise Good.

3. (5/10) Elaborate what you mean by the volume of water and ice on land? We were looking for you to say that the melting of polar ice caps and snow is why the sea level is rising.

4. (10/10) Snow cover reflects sunlight into the atmosphere so it is not absorbed by the earth, and as a result snow cover will keep the earth cooler

5. (10/10) Good answer!

6. +2 Altering the time of migration due to changing weather patterns is correct.

These examples of feedback are excellent for a number of reasons. The student knows exactly why points were subtracted from their grade. They have been given feedback on each of their responses and understand what could be done better. Also, the student knows that their work is being thoroughly evaluated. This helps improve the quality of the work on future assignments.

Bad:

(44/50) "Great job, you needed more detail and explanation in a majority of your answers."

This type of feedback is not helpful to the students at all. Not only does it not tell you were the points on the assignment were specifically subtracted from; it also doesn't provide any response to the student's work. This response is particularly confusing because the grader starts off with "great work", which could easily lead to the student not understanding why full points were not awarded.

One major reason for the feedback is to explain why points were taken off. With the large size of the course, having multiple grade disputes each week creates significantly more work for the instructors.

Furthermore, the feedback is meant to be thought provoking for the students. Since the course is open-ended in nature, responding to the answers that are given with questions or additional information is important. Not only does positive feedback help them think further about the material, but it also helps them perform better on future assignments.

Examples of the feedback that I gave to the graders were:

“Please make sure that you are providing commentary to students. Even if you give them a perfect score, they still need feedback on what they did well or what they could improve. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Let me know if you have any questions, I am happy to help. Thanks! “

“Good job of providing explanation when a student loses points. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing feedback on their response. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments. Let me know if you have any questions. Thanks for your hard work in the course!”

I tried to make sure that I always provided positive feedback, even if there was something that I felt they could do better. After the midterm evaluations that I sent out, I did see some improvements in the feedback. There is still room to make the grading better, but I was pleased overall with the effect that the individual comments had on their feedback to students.

Standardizing Grading/Feedback

Standardization of the feedback process seems like the best way to ensure that all of the TAs are giving the best feedback possible. As mentioned previously, the quality of the feedback was much better when the grading was broken down into sections of the assignment. Most assignments in this course (with a few exceptions) are broken down into different parts with multiple questions. The rubrics are all also written like this, with different point values assigned to each question or part. Feedback should be given in this format too.

Based off of this, I think that all feedback should be given in this form:

Question 1 (XX/XX) Include comments here.

Question 2 (XX/XX) Include comments here.

Question 3 (XX/XX) Include comments here.

Question 4 (XX/XX) Include comments here.

If other points were subtracted (such as for late submission), explain that here.

Total: XX/XX

This will reduce variability in grading, reduce grade disputes, and increase commentary quality.

Recommendations for Future Semesters

There are a few other things that could help improve the feedback quality:

1. Have a mandatory “class” at the beginning of the course for undergraduate teaching assistants showing TAs early on in the course what the expectation for feedback is could help significantly improve quality.
2. Hold teaching assistants more accountable for their feedback. Make sure that they understand that the quality of the work will impact their grade. I am not sure if this is taken into account during the grading process, but I don’t remember it being very clear that it was when I was an undergraduate TA.
3. Have one more graduate TA looking at the grading from each week. This way two TAs will be looking at the feedback and can contact the undergraduate TAs if the feedback is not up to par. Make sure that the graduate TAs are held accountable for looking at the grading each week.

Conclusion/Final Thoughts

Hopefully with the improvements made this semester, the feedback on the final exams will be high-quality and helpful to students. Even if only a few of the recommendations listed above are used, I think the accountability and quality of the student/TA interactions will greatly improve.

Appendix

Table A1. Midterm Evaluation of all undergraduate teaching assistants.

Teaching Assistant Name	Feedback to Teaching Assistant
Samantha	Overall good job grading. The way that you address each question and show the point divisions is excellent. When a student gets a perfect score on a particular question, make sure that you still provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Keep up the good work!
Kristina	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Steven	You are doing a good job of providing explanation when a student loses points. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing some type of feedback about their response. Try to not leave a comment that just says "good work" etc..
Michael	Good job of providing explanation when a student loses points. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing some type of feedback about their response. Try to not leave a comment that just says "good work" etc..
Shari	For some of the assignments you grade, you do an excellent job of breaking down the

	grading by question and addressing each on of their responses. Make sure you are consistently doing this for every assignment you grade. Particularly when a student gets a perfect score, make sure you are providing feedback on their correct answers. This is very helpful to the students for future assignments, and helps them think about their responses further.
Andrea	You're doing a great job providing feedback! The way that you break it down by question is perfect, and you are providing feedback even when their responses are correct. Keep up the good work.
Jennifer	You're doing a good job of explaining to students what they did incorrectly. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing some type of feedback about their response. Try to not leave a comment that just says "good work" etc..
Elyse	Keep up the good work with providing positive feedback. One thing that you could to make your commentary and grading even more effective is to break each question or section down by the point values assigned and provide feedback on each section that way. This is not always appropriate (aka for essays) but it tends to make the feedback more clear. Good job overall!
Erin	You are doing a good job of explaining to students why you took off points when they did something incorrectly. Please make sure that you are still providing feedback when you give a perfect score. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Keep up the good work!
Erik	Overall, good job on grading assignments. When a student gets a perfect score on a particular question, make sure that you still

	provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam.
Steven	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Fransisco	When students do something incorrectly, please make sure you are providing them with a detailed explanation of what they did incorrectly and how they could do it better. One way to do this concisely is to break down the questions by section tell them how many points they got on each section and what they did well or what they did incorrectly. This is very helpful to the students for future assignments, and helps them think about their responses further.
Ogochukwu	Please make sure that you are providing commentary to students. Even if you give them a perfect score, they still need feedback on what they did well or what they could improve. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Keep up the good work!
Erin	You are doing a great job of providing feedback to students. You are great at providing both positive and negative feedback. Thanks for your hard work!
Jordan	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer

	would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Rachel	Great work with providing feedback on assignments! Your commentary is thought provoking and insightful. You are clearly spending a lot of time providing feedback, and it shows. Make sure that when you give a perfect score you are still providing the same level of commentary. Keep it up!
YouJin	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Amrita	Overall, good job on grading assignments. When a student gets a perfect score on a particular question, make sure that you still provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Keep up the good work!
Daniel	Please make sure that you are providing commentary to students. Even if you give them a perfect score, they still need feedback on what they did well or what they could improve. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam.
Connoer	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them

	<p>what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.</p>
Vanessa	<p>Great job providing detailed feedback, you are clearly taking the time to come up with thoughtful commentary. Please make sure that when you give a student a perfect score that you are still giving feedback on their response. We appreciate your hard work!</p>
Michael	<p>Please make sure that you are providing commentary to students. Even if you give them a perfect score, they still need feedback on what they did well or what they could improve. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam.</p>
Dhanya	<p>Overall, good job on grading assignments. When a student gets a perfect score on a particular question, make sure that you still provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam. Keep up the good work!</p>
Jonathan	<p>You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.</p>
Aaron	<p>Please make sure that you are providing commentary to students. Even if you give them a perfect score, they still need feedback</p>

	on what they did well or what they could improve. This is an integral part of the class as it is an online course. Providing feedback will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam.
Lauren	Overall, good work! You are doing a good job of providing explanation when a student loses points. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing some type of feedback about their response.
Daniella	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Garret	Overall, good job on grading assignments. When a student gets a perfect score on a particular question, make sure that you still provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well on the final exam.
Austin	You are doing a good job of explaining to students why you took off points when they did something incorrectly. Please make sure that you are still providing feedback when you give a perfect score. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Douglas	Good job of providing explanation when a student loses points. You are concise about

	explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing feedback on their response. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Felice	Good job of providing explanation when a student loses points. You are concise about explaining to them what they did wrong and what the correct answer was. Make sure that when you give a student full points for an assignment, that you are still providing feedback on their response. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Austin	Keep up the good work with providing positive feedback. One thing that you could to make your commentary and grading even more effective is to break each question or section down by the point values assigned and provide feedback on each section that way. This is not always appropriate (aka for essays) but it tends to make the feedback more clear. Good job overall!
Shiyi	You are doing a good job of providing feedback to students when you take off points. You are concise about explaining to them what they did wrong and what a better answer would be. In the future, when a student gets a perfect score on an assignment (or even if they don't) please make sure that you are still providing feedback on their correct answers. It is extremely helpful to students to understand what you liked about their work so that they can perform well on future assignments.
Daniel	Overall, good job on grading assignments. When a student gets a perfect score on a particular question, make sure that you still provide feedback on their answer. This will be very important when grading the midterm because you want to be able to explain to the student what in particular was good about their response so that they can perform well

	on the final exam. Keep up the good work!
Noah	<p>When students do something incorrectly, please make sure you are providing them with a detailed explanation of what they did incorrectly and how they could do it better. One way to do this concisely is to break down the questions by section tell them how many points they got on each section and what they did well or what they did incorrectly. This is very helpful to the students for future assignments, and helps them think about their responses further.</p>